REMARKS

Claims 1-19 are currently pending in this application. Claims 1, 4, 5, 8, 10, 11, 14 and 15-18 have been rejected under 35 USC §102 as being anticipated by Volkerink et al. (U.S. Pat. Appl. Pub. No. 2004/0107395). Claims 2, 3, 6, 7, 9, 12 and 13 have been rejected under 35 USC §103(a) as being unpatentable over Volkerink et al. in view of DeSouza et al. (U.S. Pat. No. 5,245,617). Claim 19 has been rejected under 35 USC §103(a) as being unpatentable over Volkerink et al. in view of Chirashnya et al. (U.S. Pat. No. 6,601,195). Claim 15 is cancelled and claims 1-5, 8-11, 14 and 16-19 are amended herein.

Amended independent claim 1 recites, *inter alia*, automatic test equipment for testing non-deterministic packet data including a memory for storing expected packet data, a receiver for receiving actual packet data from a device-under-test, and a data validation circuit coupled to the receiver for validating the non-deterministic packet data based on the expected packet data from the memory, the data validation circuit comprising a first-in-first-out circuit having an input coupled to the receiver and a match circuit having a first input coupled to the first-in-first-out circuit and a second input coupled to the memory.

Amended independent claim 8 recites, *inter alia*, automatic test equipment for testing non-deterministic packet data including means for storing expected packet data, means for receiving actual packet data from the device-under-test, and means for validating the non-deterministic packet data based on the expected packet data from the means for storing, the means for validating comprising a first-in-first-out circuit having an input coupled to the means for receiving and a match circuit having a first input coupled to the first-in-first-out circuit and a second input coupled to the means for storing.

Amended independent claim 14 recites, *inter alia*, a method of testing non-deterministic packet data using automatic test equipment, the method including receiving actual packet data from a device-under-test, sequencing the actual packet data through a first-in-first out circuit, comparing, in the order received, each actual packet data to the expected packet data in the memory, and validating the non-deterministic packet data based on the comparing step.

Amended independent claim 19 recites, *inter alia*, a method of validating non-deterministic packet data using automatic test equipment, the method including establishing a library of known signatures in the memory, testing a device-under-test, generating a signature of actual packet data captured during the testing step, comparing the generated signature from the captured data to the library of known signatures, determining a pass/fail result for the device test if the compared signature matches at least one known signature in the library, evaluating the captured data to determine whether the device passed/failed if the compared signature does not match at least one known signature in the library, generating a new signature for the evaluated captured data, and adding the new signature to the library of known signatures.

Independent claims 1, 8 and 14 are patentable over Volkerink et al. and DeSouza et al. because neither of these references show or suggest automatic test equipment having a data validation circuit including a first-in-first-out (FIFO) circuit and a match circuit. In addition, independent claim 19 is patentable over Volkerink et al. and Chirashnya et al., because neither of these references show or suggest a method using automatic test equipment including establishing a library of known signatures, comparing the generated signature to the library of known signatures, generating a new signature and adding the new signature to the library of known signatures.

Volkerink et al. disclose an external tester that compares a generated signature with an

expected signature to determine whether a device under test (DUT) is functioning as expected.

The generated signature is for at least a portion of the output data received from the DUT. If the

generated signature fails to match an expected signature, then error data can be written to an error

map log. Mask data may be used for masking or filtering out certain non-deterministic output

bits in generating the signature. As the Examiner admits, Volkerink et al. do not disclose or

suggest a FIFO circuit or a comparator having a first input coupled to the FIFO circuit and a

second input coupled to the memory, and Volkerink et al. do not disclose or suggest establishing

a library of known signatures in a memory, comparing the generated signature to the library of

known signatures, generating a new signature and adding the new signature to the library of

known signatures. *See* Office action, pages 5 and 8. Instead, the Examiner states that it would

have been obvious to one of ordinary skill in the art to modify the teachings of Volkerink et al. to

include the FIFO memory circuit as taught by DeSouza et al. to make the present invention and

to modify the teachings of Volkerink et al. to include the fault-service daemon as taught by

Chirashnya et al. to make the present invention.

DeSouza et al. disclose a media access controller that provides a content addressable

memory architecture which allows the controller to determine if incoming data packets received

from the network are intended for use by the user system associated with that controller. The

media access controller provides a transmitter FIFO which screens out invalid data bytes prior to

transmission into the network. Data bytes having validity tag bits indicating invalid data are

simply written over by new data bytes arriving within the transmitter FIFO. DeSouza et al.

further disclose a FIFO memory register having validity bits associated with each stored data

byte, such that data bytes may be indiscriminately stored and invalid data bytes are discarded

during retrieval of the stored data bytes. *See*, col. 5, line 60 – col. 6, line 24; abstract. DeSouza

et al. do not disclose or suggest automatic test equipment having a data validation circuit including a FIFO circuit and a match circuit as disclosed in the present invention.

In addition, DeSouza et al. teach the desirability of eliminating invalid data bytes, whereas Volkerink et al. teach away from the dropping of a portion of the output data, mask data and/or input data. *See, e.g.,* DeSouza et al., col. 5, lines 48-53; Volkerink et al., paragraph 0009. Moreover, Volkerink et al. teach an external tester which allows for the error evaluation of detected errors, but DeSouza et al. teach that invalid data bytes are discarded or written over with no subsequent error evaluation of detected errors. Therefore, there is no suggestion or motivation to combine the DeSouza et al. reference with the Volkerink et al. reference in the way suggested by the Examiner.

Furthermore, DeSouza et al. relates to a network interface controller which manipulates and controls the flow of binary data between a digital system and a local area network. Consequently, there is no suggestion or motivation to combine DeSouza et al. with a reference about automated test equipment as disclosed in Volkerink et al. to make the claimed invention.

Chirashnya et al. disclose methods for fault simulation and diagnostics in packet-switched data networks and disclose methods and apparatus for identifying a faulty switch adapter, which couples a network node to a switch in the network. In an appendix related to client-server switch network diagnostics architecture and framework, Chirashnya et al. disclose a fault-service daemon (FSD) that loads a dynamically-loadable library. The main responsibility of the library is to "provide a general interface between tests and the FSD, abstract the FSD logic from the test logic, and to provide a common general mechanism for communication with the user" on the control workstation. Col. 24, lines 51- 55. When the library is loaded and properly initialized, it loads a test that is to be performed. Every test is implemented as a dynamically-loadable library,

which is statically linked with a Test Object-Oriented Framework. The library receives all

necessary information about the test and loads the test library and resolves all test interface

functions. *See*, col. 24, lines 57 – 67. Chirashnya et al. do not disclose or suggest establishing a

library of known *signatures* and comparing the generated signature to the library of known

signatures. Moreover, Chirashnya et al. do not disclose or suggest generating a *new signature*

and adding the new signature to the library of known signatures.

Furthermore, Chirashnya et al. relates to packet-switched computer networks and testing

and diagnosing malfunctions in such networks. Consequently, there is no suggestion or

motivation to combine Chirashnya et al. with a reference about automated test equipment as

disclosed in Volkerink et al. to make the claimed invention.

For the foregoing reasons, independent claims 1, 8 and 14 are patentable over Volkerink

et al. and DeSouza et al. because neither of these references show or suggest automatic test

equipment having a data validation circuit including a FIFO circuit and a match circuit as recited

in independent claims 1 and 8, or a method using a FIFO circuit and a comparing step as recited

in independent claim 14. In addition, independent claim 19 is patentable over Volkerink et al.

and Chirashnya et al., because neither of these references show or suggest a method using

automatic test equipment including establishing a library of known signatures, comparing the

generated signature to the library of known signatures, generating a new signature and adding the

new signature to the library of known signatures as recited in independent claim 19. Therefore,

claims 1, 8, 14 and 19 are not rendered anticipated or obvious by any of these references.

Dependent claims 2-7, 9-13 and 16-18 depend directly or indirectly from independent

claims 1, 8 and 14 and thus contain all of the limitations of the independent claims from which

they depend. Therefore, these dependent claims are patentable over Volkerink et al., DeSouza et

al. and Chirashnya et al. for at least the same reasons set forth above with respect to claims 1, 8 and 14.

The amendment to the specification on page 5, line 35 addresses the minor informalities noted by the Examiner on page 1 of the Office action. No new matter has been added.

Enclosed is a Petition for a Three Month Extension of Time. Please charge the required fee to Deposit Account No. 20-0515, Docket No. 1563.

Applicants submit that all of the claims are now in condition for allowance, which action is requested. Please apply any additional charges or credits to Deposit Account No. 20-0515.

Respectfully submitted,

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